ABSTRACT OF THE DISCLOSURE

A modal converter having at least one ultrasonic transducer or at least one array of such transducers positioned on the modal converter at various angles relative to a tissue surface and bone tissue surface, such that some combination of one or more of the following occur: longitudinal waves are produced perpendicular to the bone surface, longitudinal waves propagate along the surface of the skin after incidence at the skin tissue surface, and both longitudinal and shear waves propagate along the surface of the bone after incidence at the bone tissue surface. Illuminating an open tissue wound and bone fracture site with these acoustic modes enhances and promotes angiogenesis and the biological endostial or periostial healing phases, or both, of the bone fracture healing process. The spatial and temporal distribution of acoustic waves directed to the treatment area via the ultrasonic transducers and the modal converter may be controlled.